

Electronic Version

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## Claims

- [c1] 1. A flip chip package structure, comprising:
- a substrate comprising a first surface, a plurality of first contact pads and at least a second contact pad on the first surface, wherein a size of the second contact pad is larger than that of one of the first contact pads;
  - at least a chip, comprising an active surface, a plurality of first bonding pads and at least a second bonding pad on the active surface, wherein a size of the second bonding pad is larger than that of one of the first bonding pads;
  - a plurality of first bumps, respectively connecting one of the first bonding pads to the corresponding one of the first contact pads; and
  - at least a second bump, connecting the second bonding pad to the second contact pad, wherein a size of the second bump is larger than a size of one of the first bumps.
- [c2] 2. The flip chip package structure of claim 1, wherein the size of the second bump is twice the size of one of the first bumps.
- [c3] 3. The flip chip package structure of claim 1, wherein the first bumps are disposed around a periphery of the second bump.
- [c4] 4. The flip chip package structure of claim 1, wherein the first bonding pad is selected from the group consisting of a signal bonding pad, a power bonding pad, and a ground bonding pad.

- [c5] 5. The flip chip package structure of claim 1, wherein the second bonding pad is selected from the group consisting of a power bonding pad, a ground bonding pad, and a special signal bonding pad.
- [c6] 6. The flip chip package structure of claim 1, further comprising an underfill filled into a cavity that is surrounded by the substrate, the chip, the first bumps, and the second bump.
- [c7] 7. A flip chip substrate, comprising:  
a substrate comprising a first surface, a plurality of first contact pads and at least a second contact pad on the first surface, wherein a size of the second contact pad is larger than that of one of the first contact pads;  
a plurality of first bumps, respectively connected to one of the first contact pads; and  
at least a second bump, connected to the second contact pad, wherein a size of the second bump is larger than a size of one of the first bumps.
- [c8] 8. The flip chip substrate of claim 7, wherein the size of the second bump is twice the size of one of the first bumps.
- [c9] 9. The flip chip substrate of claim 7, wherein the first bumps are disposed around a periphery of the second bump.
- [c10] 10. A flip chip device, comprising:  
a chip comprising an active surface, a plurality of first bonding pads and at least a second bonding pad on the active surface, wherein a size of the second bonding pad is larger than that of one of the first bonding pads;

a plurality of first bumps, respectively connected to one of the first bonding pads; and

at least a second bump, connected to the second bonding pad, wherein a size of the second bump is larger than a size of one of the first bumps.

- [c11] 11. The flip chip device of claim 10, wherein the size of the second bump is twice the size of one of the first bumps. 12. The flip chip device of claim 10, wherein the first bumps are disposed around a periphery of the second bump.